

# LOAN DOCUMENT

DTIC ACCESSION NUMBER	<div style="border: 1px solid black; width: 100px; height: 80px; margin: 0 auto;"></div> <p>LEVEL</p>	<p>PHOTOGRAPH THIS SHEET</p>	<div style="border: 1px solid black; width: 100px; height: 80px; margin: 0 auto;"></div> <p>INVENTORY</p>																														
	<p>DOCUMENT IDENTIFICATION</p>																																
	<p>DISTRIBUTION STATEMENT</p>																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;">ACCESSION FOR</td> </tr> <tr> <td style="width: 50%;">NTIS</td> <td style="width: 50%;">GRAM <input checked="" type="checkbox"/></td> </tr> <tr> <td>DTIC</td> <td>TRAC <input type="checkbox"/></td> </tr> <tr> <td>UNANNOUNCED</td> <td><input type="checkbox"/></td> </tr> <tr> <td colspan="2">JUSTIFICATION</td> </tr> <tr><td colspan="2"> </td></tr> <tr><td colspan="2"> </td></tr> <tr><td colspan="2"> </td></tr> <tr><td colspan="2"> </td></tr> <tr><td colspan="2"> </td></tr> <tr> <td colspan="2">BY</td> </tr> <tr> <td colspan="2">DISTRIBUTION/</td> </tr> <tr> <td colspan="2">AVAILABILITY CODES</td> </tr> <tr> <td style="width: 50%;">DISTRIBUTION</td> <td style="width: 50%;">AVAILABILITY AND/OR SPECIAL</td> </tr> <tr> <td style="height: 40px; vertical-align: middle; font-size: 2em;">A-1</td> <td></td> </tr> </table>				ACCESSION FOR		NTIS	GRAM <input checked="" type="checkbox"/>	DTIC	TRAC <input type="checkbox"/>	UNANNOUNCED	<input type="checkbox"/>	JUSTIFICATION												BY		DISTRIBUTION/		AVAILABILITY CODES		DISTRIBUTION	AVAILABILITY AND/OR SPECIAL	A-1	
ACCESSION FOR																																	
NTIS	GRAM <input checked="" type="checkbox"/>																																
DTIC	TRAC <input type="checkbox"/>																																
UNANNOUNCED	<input type="checkbox"/>																																
JUSTIFICATION																																	
BY																																	
DISTRIBUTION/																																	
AVAILABILITY CODES																																	
DISTRIBUTION	AVAILABILITY AND/OR SPECIAL																																
A-1																																	
<p>DISTRIBUTION STAMP</p>		<p>DATE ACCESSIONED</p>																															
<p>DATE RECEIVED IN DTIC</p>		<p>DATE RETURNED</p>																															
<p>REGISTERED OR CERTIFIED NUMBER</p>																																	

HANDLE WITH CARE

19981223 067

PHOTOGRAPH THIS SHEET AND RETURN TO DTIC-FDAC

UNCLASSIFIED

NO DISTRIBUTION  
STATEMENT

NADC

Tech. Info.

APPENDIX 5  
COMMON DATA BASE SPECIFICATION  
FINAL SOFTWARE REPORT  
DATA ITEM NO. A005

Reproduced From  
Best Available Copy

# INTEGRATED ELECTRONIC WARFARE SYSTEM ADVANCED DEVELOPMENT MODEL (ADM)

PREPARED FOR:

NAVAL AIR DEVELOPMENT CENTER  
WARMINSTER, PENNSYLVANIA

CONTRACT N62269-75-C-0070

RAYTHEON

ELECTROMAGNETIC  
SYSTEMS DIVISION

1 OCTOBER 1977

UNCLASSIFIED

APPENDIX 5  
COMMON DATA BASE SPECIFICATION  
FINAL SOFTWARE REPORT  
DATA ITEM A005

INTEGRATED ELECTRONIC WARFARE SYSTEM (IEWS)  
ADVANCED DEVELOPMENT MODEL (ADM)

Contract No. N62269-75-C-0070

Prepared for:

Naval Air Development Center  
Warminster, Pennsylvania

Prepared by:

RAYTHEON COMPANY  
Electromagnetic Systems Division  
6380 Hollister Avenue  
Goleta, California 93017

1 OCTOBER 1977

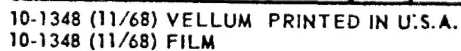




TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
1.0	SCOPE	
1.1	Introduction	
1.2	Labeling Conventions	
2.0	APPLICABLE DOCUMENTS	
2.1	Computer Program Performance Specification	
2.2	Computer Program Design Specification	
2.3	Additional Documents	
3.0	REQUIREMENTS	
3.1	Tables	
3.2	Variables	
3.3	Constants	
3.4	Flags	
3.5	Indices	
3.6	Program Module Reference	
3.7	Overall Structure	

Appendices

- A. Tables
- B. Constants
- C. Variables
- D. Conversion
- E. Symbolic Designations
- F. Cross Reference Table

1.0 SCOPE

## 1.1 INTRODUCTION

This CDBDD (Common Data Base Design Document) specifies the computer program common data requisite to the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM). This program shall be addressed herein as the IEWS-ADM program. Common data is that data required by two or more modules and/or blocks of the IEWS-ADM program. This CDBDD, based upon the CPPS (Computer Program Performance Specification) and developed in accordance with the CPDS (Computer Program Design Specification), provides a detailed description of all common data tables, variables, constants, flags and indices.

## 1.2 LABELING CONVENTIONS

Mnemonics in the IEWS-ADM program shall be 5 or less characters in length. The first two characters of the mnemonic for every task name, procedure name, subprogram name, entry point, statement label, and data item identify the functional group they are associated with. The first two characters to be used in the formation of a mnemonic for each of the IEWS functional group are listed in the CPDS for IEWS software and in Section 1.2.

Procedure, subprogram, and data names are two to five characters in length and begin with the functional group mnemonic.

Statement labels within a procedure or subprogram consist of the procedure or subprogram name, or a contraction of the name, as a prefix.

Entry points to a procedure or subprogram follow the same conventions as statement labels.

**RAYTHEON**RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## 2.0 APPLICABLE DOCUMENTS

The following documents, of the exact issue shown, form a part of this specification to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this specification, the contents of the Computer Program Design Specification for the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM) Program shall be considered superseding requirements.

### 2.1 COMPUTER PROGRAM PERFORMANCE SPECIFICATION

Computer Program Performance Specification for the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM) Program (U), Raytheon Company, Electromagnetic Systems Division, (Number 061290529), (date 1 June 1976), (Classification U).

### 2.2 COMPUTER PROGRAM DESIGN SPECIFICATION

Computer Program Design Specification for the Integrated Electronic Warfare System (IEWS) Advanced Development Model (ADM) Program (U), Raytheon Company, Electromagnetic Systems Division, 53959-GT-0750, 2 September 1976, (Classification U).

### 2.3 ADDITIONAL DOCUMENTS

- a. Requirements for Digital Computer Program Documentation (U), Weapons Specification WS-8506, Revision 1, Naval Ordnance Systems Command Department of the Navy, 1 November 1971, Unclassified.

### 3.0 REQUIREMENTS

This section contains a complete description of the common data base for the IEWS-ADM program. Descriptions of common data elements are ordered alphabetically according to their mnemonics.

### 3.1 TABLES

This section contains a detailed description of each table included in the common data base. A list of common data tables is contained in Appendix A. The description of each table consists of the following:

- a. The title of the table with the assigned mnemonic label in parentheses.
- b. The table type and the explicit use of the table.
- c. The number of items in the table and the number of computer words required by each item.
- d. The method used to index through the various items of the table and any special conditions pertaining to the referencing of an included item.

Included in the table descriptions is a chart defining the fields of each table item and the position and bit layout of each field. The field definitions contain the following information:

- aa. The title of the field.
- ab. The use of the field.
- ac. The data type of the field. If none is specified, then the data type is assumed to be unsigned integer variable.
- ad. The size of the field (number of bits if numeric; number of ASCII code bits if alphanumeric).
- ae. The scaling of the field.

- af. The minimum and maximum values that valid for the field. If none is specified, then the minimum and maximum values are assumed to be zero and all bits set, respectively.
- ag. The initial value of the field if it is preset. If none is specified, then the initial value is zero.

The numbers to the left of the blocks on the chart are word positions of the words in the table element. The first word is word 0. Subsequent words are numbered in decimal.

In the chart of each table item, fields are represented by name (letters) if variable, and by value (integer) if fixed, for that particular form of the table item. Except where stated otherwise, all numbers corresponding to bit patterns in fields are shown in integer and all numbers representing interpretation of fields are shown in integer.

In the chart, fields are normally designated by name. When it is necessary to make some comment about an unnamed field (constant or unused), it is designated by bit position.

In the chart of each table item, a field that is not used and that is not reserved, is designated by an elongated dash, or by the name dc (don't care) (defined to be -- $\emptyset\emptyset\emptyset$ ).

In the chart, the bit positions of the beginning and end of every field are shown whether or not the field is used. The bit positions are marked above the block, in decimal.

In the chart, all the fields of word 0 in the table item that require comment are listed first, followed by the fields of word 1, and so on, reading each word from left to right. The number of the word in the table item in which the field is found, is to the left of the first field discussed in that word.

In some cases the label assigned to that word is also shown.

The right side of the table contains columns for units and scaling.

The scaling convention shows the number of bits before and after the binary point. For example: 10-5 means that the field is 15 bits long, with 10 bits before the binary point and 5 bits after the binary point.

On or set conditions which are indicated by a single bit quantity, shall be represented by a 1. Off or not set conditions indicated by a single bit quantity, shall be represented by a 0. For example, for instruction fault, 1 is interpreted as a fault and 0 is interpreted as no fault.

Single bit quantities used for other states or conditions shall be addressed in the table item description.

The following abbreviations are used in the columns:

ASCII	= American standard code for information interchange
BAMS	= Binary angular measure
CW	= Continuous wave
dB	= Decibels
dBm	= Decibels above a milliwatt
DEG or °	= Degree
ECM	= Electronic Countermeasures
EW	= Electronic warfare
FA	= Frequency agile
ID	= Identification
LSB	= Least significant bit
MHz	= Megahertz
MSB	= Most significant bit
msec	= Milliseconds

$^{\circ}R$	=	Relative angle with respect to direction of travel of own platform
RF	=	Radio frequency
sec	=	Seconds
usec	=	Microseconds
wrt	=	With respect to

ASCII codes are listed in Appendix D.

### 3.2 VARIABLES

This section contains a detailed description of each variable included in the common data base. The description of each variable consists of the following, contained in Appendix C.

- The variable mnemonic label.
- The variable type and explicit use of the variable.
- The size of the variable (number of bits if numeric; number of ASCII codes bits if alphanumeric).
- The scaling of the variable.
- The minimum and maximum values that are valid for the variable.
- The initial value of the variable if present.
- A chart showing the bit layout of the variable.

### 3.3 CONSTANTS

This section contains a detailed description of each constant included in the common data base. The description of each constant consists of the following, contained in Appendix C.

- The constant mnemonic label.
- The constant type and explicit use of the constant.
- The initial value of the constant.
- A chart showing the bit layout of the constant.

### 3.4 FLAGS

This section contains a detailed description of each flag included in the common data base. The description of each flag consists of the following:

- a. The flag mnemonic label.
- b. The flag type and explicit use of the flag.
- c. The initial value of the flag, if preset.
- d. A chart showing the bit layout of the flag.

There are no flags used.

### 3.5 INDICES

This section contains a description of each index included in the common data base. The description of each index consists of the following:

- a. The index mnemonic label.
- b. The explicit use of the index.

There are no indices used.

### 3.6 PROGRAM MODULE REFERENCE

This section contains the program module reference list, Table 3.6-1. Presented in the table is a complete list of all common data base elements with a cross reference which includes all referencing program modules. This list is presented in the form of a matrix, where the rows are used for names of elements and the columns are used for names of program modules. To facilitate its use, the elements and program modules are listed alphabetically with S, U or B utilized in the matrix to indicate set, used or both (set and used) respectively.

### 3.7 OVERALL STRUCTURE

The overall structure of the Emitter Track File (EF) and other libraries and files are shown in Figures 3.7-1 and 3.7-2.

These figures illustrate the relationships between the several tables and files, and libraries which together comprise the major segment of the Common Data base.



NEW EMITTER ALERT MESSAGE

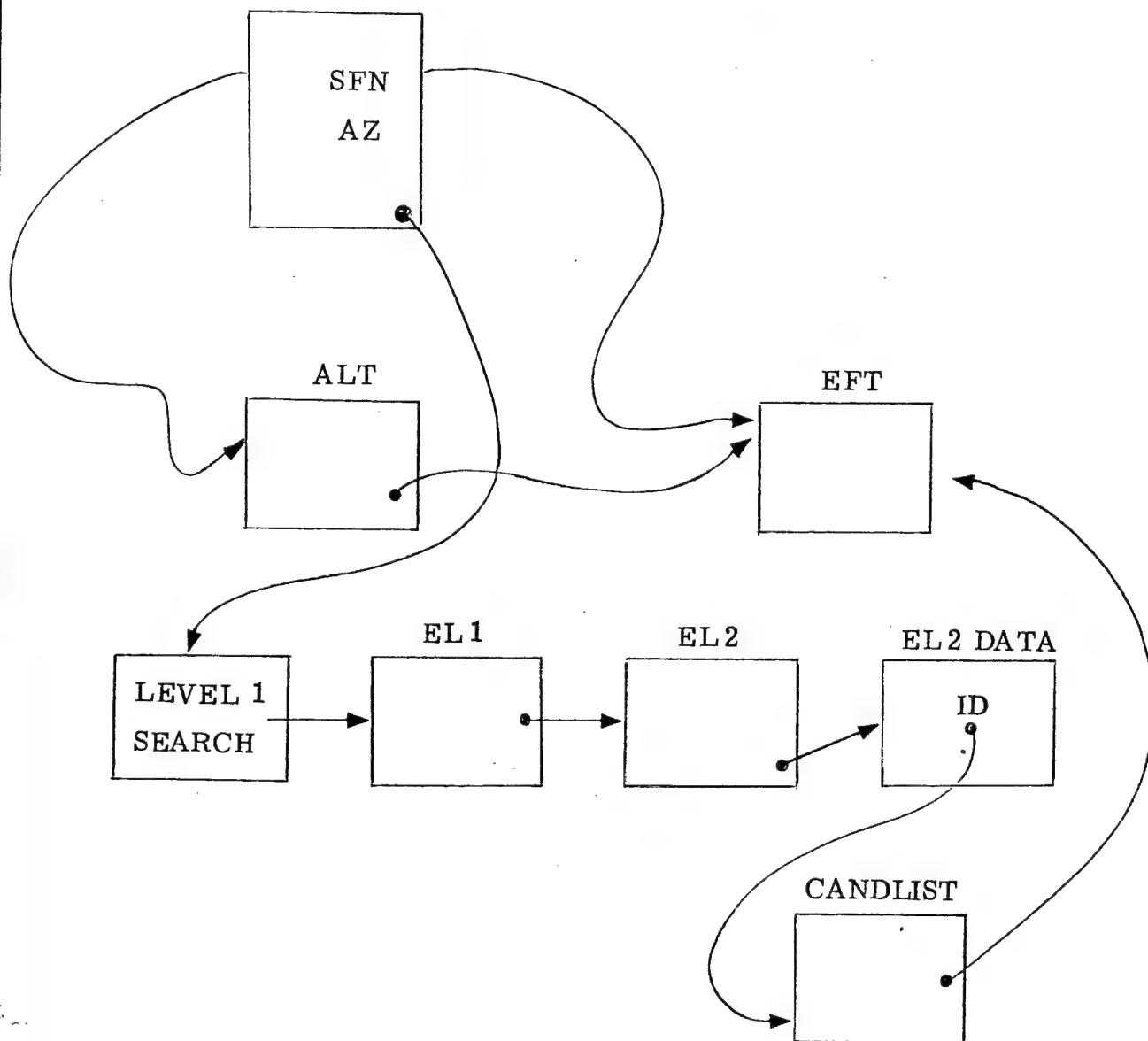


Figure 3.7-1 File Structure Interaction

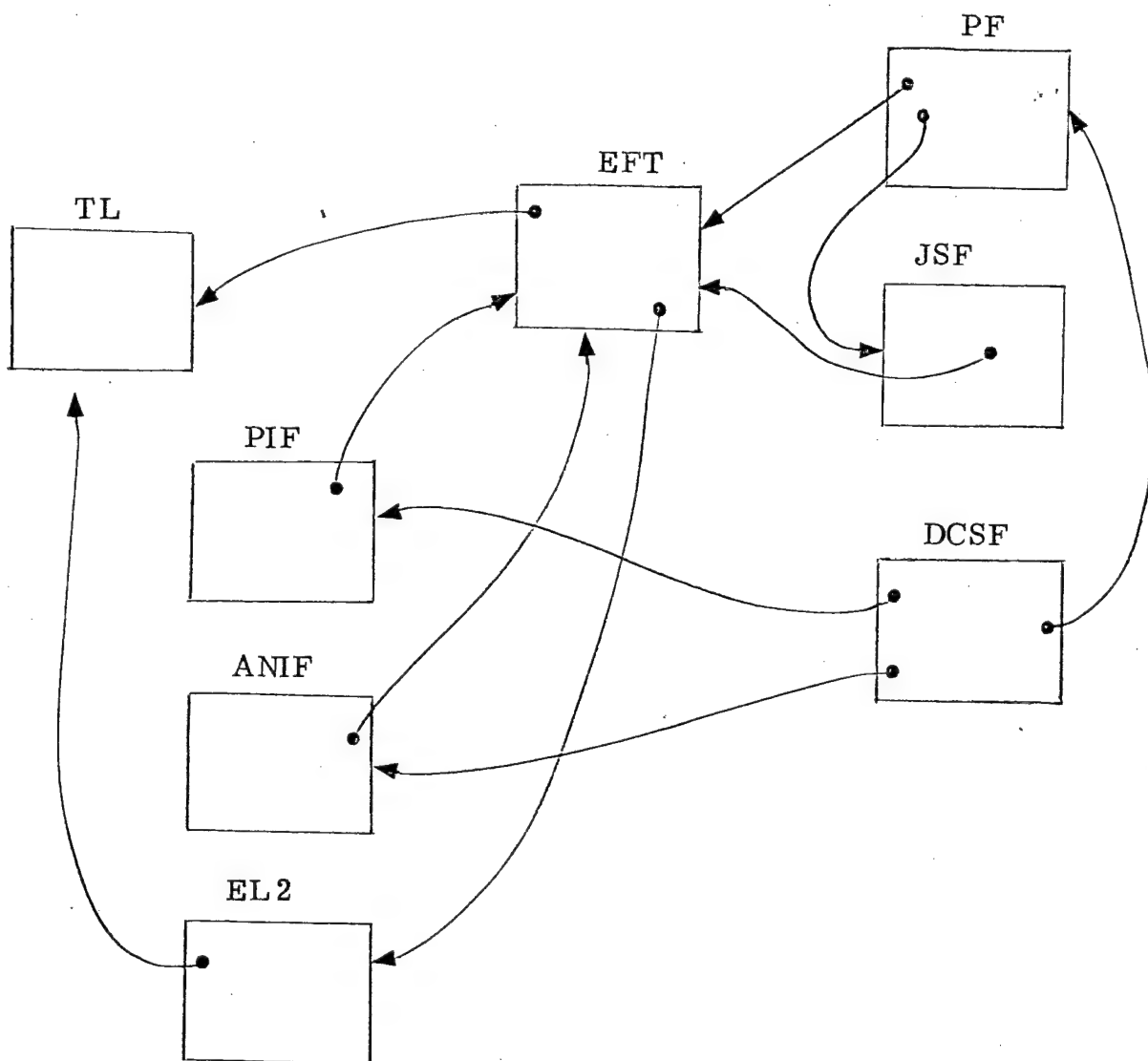


Figure 3.7-2 File Structure Interaction

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Tables

APPENDIX A

## APPENDIX A TABLE OF CONTENTS

<u>Title</u>	<u>Resident Processor(s)</u>	<u>Page</u>
Message Formats	R/C/A	
Communications Buffers	R/C/A	
Emitter Track File (EF)	R/C	
Priority File (PF)	R	
Jam Status File (JS)	R	
Resource File (RF)	R	
CD File (CD)	R	
Polar Image File (PI)	R	
An Image File (AN)	R	
Technique Library (TL)	R	
Resource Library (RL)	R	
Option Library (OL)	R	
Emitter Library 2 (EL)	R/C	
Azimuth Link Table (AZ)	R/C	
Candidate List (CL)	C	
Analysis Management Table (AM)	A	
Analysis Buffer Assignment Table (AA)	A	
Aux Bus Management Table (AU)	A	
Alpha Numeric (AC)	R	

R = Resource Management Processor

C = Classification Processor

A = Analysis Processor

**RAYTHEON**RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Executive Message Template

The message templates describe the contents of the individual messages being transferred between driver routines within the same processor and between drivers resident in different processors.

The messages only occupy memory when actual transfer occurs, and then in the form of message control blocks (MCB), and message transfer blocks (MTB). (A description of MCB and MTB are contained in the Executive Design Document, Section 2.2).

**RAYTHEON**RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Message  
NumberPage  
Number

1	Analysis Request
2	Analysis Start
3	RMP Aux Bus Control
4	Analysis Return
5	Sorter Instrumentation
6	Sys Manage 1
7	Update
8	Start ABRDR
9	Classification
10	PRI Override
11	PRI Return
12	Tech Override
13	Tech Return
14	Master Clear
15	Sys Test Start
16	Sys Test End
17	Start ABDDR
18	Send Data
19	Sorter Control
20	Modify Display
21	ET Interrupt
22	Start ABIDR
23	AP Aux Bus Control
24	Get Main
25	Free Main

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

MSG #	PROC.	MESSAGE	SOURCE	DESTINATION	PROC.
1	CP	Analysis Request	Sort Message Drvr (SODR)	ABI Mng 1 Drvr (AB1DR)	CP
1	"	"	Anal. Rtn. Drvr (ANDR)	"	"
1	"	"	Emit Class 1 (ECDR)	"	"
2	"	Analysis Start	ABI Mng 1 Drv (AB1DR)	ABI Mng 2 Drv (AB2DR)	AP
3	RMP	RMP Aux Bus Contr	Res Manage (RMDR)	ABI Mng 1 Drv (AB1DR)	CP
4	CP	Analysis Return	ABI Mng 1 Drvr (AB1DR)	ANDR, Anal Return Driver	CP
4	AP	"	ABI Done Drvr (ABDDR)	"	CP
5	"	Instr. Msg.	Sort Msg Drvr (SODR)	Instrum I/F	STE
			Th. Alt. Proc (SOTHR)		
			Conf File Create (SOCFC)		
			ALR-50 (SOALR)		
			Long Pulse (SOLP)		
			Sort Inst. (SOINS)		
			MFF Proc. (SOMFF)		
6	CP	Sys Mng 1 Msg	Sys Mng 1 (SOSM1)	Sys Mng 2 Drvr (SMDR)	RMP
7	"	Update Msg.	EOC Proc 1 (SOOC1)	Res Mng Drvr (RMDR)	"
			Inact File Proc (SODEL)		
			Amb. Resol		
			EOC Proc 2 (ANOC2)		
			EOC Proc 4 (ANOC4)		
8	AP	Start ABRDR	APEXI BUF FLL INT (APEX)	ABI Return Drvr (ABRDR)	AP
9	CP	Class Msg	NE Proc 3 (ANNE3)	EMIT Class 1 (ECDR)	CP
9	"	"	NOFA1 Proc (SONA1)	"	"
10	RMP	Pri. Override	D/C Drvr (DCDR)	Res Mng Drvr (RMDR)	RMP
11	"	Pri. Return	"	"	"
12	"	Tech. Override	"	"	"
13	"	Tech. Return	"	"	"
14	"	Master Clear	"	Sys Test Drvr (STR)	"
15	"	System Test Start	"	"	"
16	"	System Test End	"	"	"
17	AP	Start ABDDR	{ABI Return (ABRDR), Time Out (ABTCK)}	ABI Done Drvr (ABDDR)	AP
18	RMP	Send Data	(DCDR)	(DCSEND)	RMP

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

MSG. #	PROC.	MESSAGE	SOURCE	DESTINATION	PROC.
19	CP	Sorter Control	ABI Mng 1 Drvr (AB1DR)	Sorter Buffer	Sorter
20	RMP	Modify Display	Sort Message Dr (SODR)	(DCDR)	RMP
21	RMP	ET INT	(RMDR)	RMDR	RMP
22	AP	Start ABIDR	RMPEX	ABIDR	AP
23	AP	AP Aux Bus Contr	ABI Mng 2 Dr (AB2DR)	ABI Mng 1 DRV (AB1DR)	CP
24	CP	Get Main	ABI Init 2 Drv (ABIDR)	CPEX	CP
25	CP	Free Main	(ECDR)	CPEX	CP
			(ANDR)		



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

ANALYSIS REQUEST MESSAGE

Message #1

From: Processor - Classification

Drivers SODR ANDR ECDR

Routines SON2I ANNA2

SOOC1 ANOC2

To: Processor - Classification

Driver AB1DR

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

MNO

NW

RMC

EFN

PTR

A  
W

D C P F S  
I A A A A

C  
1

CEFN1

C  
2

CEFN2

C  
3

CEFN3

NOT USED

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Field	Description	Units	LSB
MNO	Executive Msg. No. (= 1)	N/A	1
NW	No. of words in message (= 3)	N/A	1
RMC	Return of Module Code	N/A	N/A
	1 = NEPROC2 6 = EOC PROC3		
	2 = NEPROC3 7 = EOC PROC4		
	3 = NOFA2 PROC2 8 = EM CLASS 2		
	4 = NOFA2 PROC3 9 = EM CLASS 3		
EFN	Emitter File no. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1
PTR	Pointer to Candidate List	N/A	1
AW	Analysis Wanted Flag	N/A	N/A
	( $\emptyset$ means No Analysis; 1 means Analysis Wanted)		
DI	Deinterleaving Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No DI Analysis; 1 means DI Wanted)		
CA	Contemporaneous Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No CA Wanted; 1 means CA Wanted)		
PA	PRI Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No PRI Analysis; 1 means PRI Wanted)		
FA	Frequency Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No Freq. Analysis; 1 means FA Wanted)		
SA	Scan Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No Scan Analysis; 1 means SA Wanted)		

NOTE: An analysis request should have one and only one of the following flags set:  
DI, CA, PA, FA, or SA. AW may be set (=1) or reset (=0) to make the request valid or null, respectively.

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
C1	If CA requested, and C1=1 CEFN1 is valid	N/A	N/A
CEFN1	Suspected contemporaneous emitter no. 1	N/A	1
C2	If CA requested, and C2=1 CEFN2 is valid	N/A	N/A
CEFN2	Suspected contemporaneous emitter no. 2	N/A	1
C3	If CA requested, and C3=1, CEFN3 is valid	N/A	N/A
CEFN3	Suspected contemporaneous emitter no. 3	N/A	1

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## ANALYSIS START MESSAGE

Message #2

From: Processor - Classification  
Driver AB1DR

To: Processor Analysis  
Driver AB2DR

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

0

MNO

1

NW

2

RMC

EFN

3

PTR

4

A  
W

D C P F S  
I A A A A

5

C  
1

CEFN1

6

C  
2

CEFN2

7

C  
3

CEFN3

8

NOT USED

9

10

11

12

13

14

15

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
C1	If CA requested, and C1=1	N/A	N/A
CEFN1	CEFN1 is valid	N/A	1
C2	Suspected contemporaneous emitter no. 1	N/A	N/A
CEFN2	If CA requested, and C2=1 CEFN2 is valid	N/A	1
C3	Suspected contemporaneous emitter no. 2	N/A	N/A
CEFN3	If CA requested, and C3=1, CEFN3 is valid	N/A	1
	Suspected contemporaneous emitter no. 3	N/A	1

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Field	Description	Units	LSB
MNO	Executive Msg. No. (= 1)	N/A	1
NW	No. of words in message (= 3)	N/A	1
RMC	Return of Module Code	N/A	N/A
	1 = NEPROC2 6 = EOC PROC3		
	2 = NEPROC3 7 = EOC PROC4		
	3 = NOFA2 PROC2 8 = EM CLASS 2		
	4 = NOFA2 PROC3 9 = EM CLASS 3		
EFN	Emitter File no. ( $\emptyset \leq$ EFN $\leq$ 127)	N/A	1
PTR	Pointer to Candidate List	N/A	1
AW	Analysis Wanted Flag	N/A	N/A
	( $\emptyset$ means No Analysis; 1 means Analysis Wanted)		
DI	Deinterleaving Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No DI Analysis; 1 means DI Wanted)		
CA	Contemporaneous Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No CA Wanted; 1 means CA Wanted)		
PA	PRI Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No PRI Analysis; 1 means PRI Wanted)		
FA	Frequency Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No Freq. Analysis; 1 means FA Wanted)		
SA	Scan Analysis Request Flag	N/A	N/A
	( $\emptyset$ means No Scan Analysis; 1 means SA Wanted)		

## NOTE:

An analysis request should have one and only one of the following flags set:  
DI, CA, PA, FA, or SA. AW may be set (=1) or reset (=0) to make the request valid or null, respectively.



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## RMP AUX BUS CONTROL

Message #3

From: Processor - Resource  
Driver RMDR  
Routine DCREI

To: Processor - Classification  
Driver AB1DR  
Routine

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2	OPCD								SFN							
3	_____										1	—	CHNO			
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY

LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of data words N = 1 for SPDW stop N = 2 for SPDW request		
OPCD	Op-Code OE - SPDW request OF - SPDW stop		
SFN	File No.		
CHNO	Channel No.		

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

ANALYSIS RETURN MESSAGE

Message #4

From: Processor - Classification Analysis  
Drivers AB1DR ABDDR

To: Processor - Classification  
Driver ANDR

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	RMC								EFN							
3	PTR															
4	STY		NOT USED		SPR											
5	NOT USED															
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Word

Field	Description	Units	LSB
MNO	Executive Msg. No. ( = 4 )	N/A	1
NW	No. of words in message ( = 3 )	N/A	1
RMC	Return Module Code 1 = NEPROC2      6 = EOC PROC3 2 = NEPROC3      7 = EOC PROC4 3 = NOFA2 PROC2    8 = EM CLASS 2 4 = NOFA2 PROC3    9 = EM CLASS 3 5 = EOC PROC2	N/A	N/A
EFN	Emitter File No. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1
PTR	Pointer to Candidate List	N/A	N/A
STY	Scan type of Emitter (See EF description for definition of codes)	N/A	N/A
SPR	Scan period of Emitter	Msec	1/4

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

SORTER INSTRUMENTATION

Message #5

From: Processor - Classification  
Driver - SODR

To: Processor - STE  
Driver - N/A

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13																
14																
15																



# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Word

Field	Description	Units	LSB
MNO	Executive Message No. ( = 5 )	N/A	1
NW	No. of words in message (max of 10, longest sorter message is 11 words, including the flag/message-length word)	N/A	1
D1	Sorter Message word 1 (Op-Code, etc.)	N/A	N/A
D2	" " 2		
D3	" " 3		
D4	" " 4		
D5	" " 5		
D6	" " 6		
D7	" " 7		
D8	" " 8		
D9	" " 9		
D10	" " 10		

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

SYSTEM MANAGEMENT 1 MESSAGE

Message #6

From: Processor - Classification

Driver - SODR

Routine - SOSM1

To: Processor - RMP

Driver - SMDR

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Ø

MNO

1

NW

2

D1

3

D2

4

D3

5

D4

6

D5

7

D6

8

D7

9

D8

10

D9

11

D10

12

NOT USED

13

14

15

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13	<div style="position: relative; height: 100px;"> <div style="position: absolute; top: 0; left: 50%; transform: translate(-50%, -50%);">↓</div> </div>															
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. ( = 5 )	N/A	1
NW	No. of words in message (max of 10, longest sorter message is 11 words, including the flag/message-length word)	N/A	1
D1	Sorter Message word 1 (Op-Code, etc.)	N/A	N/A
D2	" " 2		
D3	" " 3		
D4	" " 4		
D5	" " 5		
D6	" " 6		
D7	" " 7		
D8	" " 8		
D9	" " 9		
D10	" " 10		

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

SYSTEM MANAGEMENT 1 MESSAGE

Message #6

From: Processor - Classification  
Driver - SODR  
Routine - SOSM1

To: Processor - RMP  
Driver - SMDR

**RAYTHEON**RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D1															
3	D2															
4	D3															
5	D4															
6	D5															
7	D6															
8	D7															
9	D8															
10	D9															
11	D10															
12	NOT USED															
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Word

Field	Description	Units	LSB
MNO	Executive Message No. ( = 6 )	N/A	1
NW	No. of words in message (Max. of 10, longest sorter message is 11 words, including the flag/message-length word)	N/A	1
D1	Sorter message word 1 (Op-Code, etc.)	N/A	N/A
D2	" " 2		
D3	" " 3		
D4	" " 4		
D5	" " 5		
D6	" " 6		
D7	" " 7		
D8	" " 8		
D9	" " 9		
D10	" " 10		

Word



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

UPDATE MESSAGE

Message #7

From: Processor - Classification

Drivers - SODR ANDR

Routines - SOOC1 ANOC2

SODEL ANOC4

To: Processor - RMP

Driver - RMDR

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	D	NOT USED							EFN							
3	NOT USED															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. ( = 7 )	N/A	1
NW	No. of words in message ( = 1 )	N/A	1
EFN	Emitter file no. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1
D	Deletion flag 1 = Emitter efn has been made inactive $\emptyset$ = Normal update message	N/A	N/A

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

START ABRDR

Message #8

From: Processor - Analysis  
Routine - Buffer Full Interrupt Handler

To: Processor - Analysis  
Driver - ABRDR

**RAYTHEON**RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Ø

MSGNO

1

NOWDS

2

STATUS

3

4

5

6

7

8

9

10

11

12

13

14

15

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Message No. (= 8)	N/A	1
NOWDS	No. of data word (= 1)	N/A	1
STATUS	Contents of data buffer full status register at the time of the buffer full interrupt	N/A	N/A

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

CLASSIFICATION MESSAGE

Message #9

From: Processor - Classification  
Driver SODR, ANDR  
Routine SONA1, ANNE3

To: Processor - Classification  
Driver ECDR

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MNO															
1	NW															
2	NOT USED								EFN							
3	NOT USED															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																



# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. ( = 9 )	N/A	1
NW	No. of words in message ( = 1 )	N/A	1
EFN	Emitter File No. ( $\emptyset \leq \text{EFN} \leq 127$ )	N/A	1

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

PRI OVERRIDE

Message #10

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	MPWDS															
2	EFN															
3	PRIO															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message #		
NOWDS	Number of words to follow		
EFN	Emitter File #		
PRI0	Priority		

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

PRI RETURN

Message #11

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Ø

MSGNO

1

NOWDS

2

EFN

3

RALL

4

5

6

7

8

9

10

11

12

13

14

15

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message Number		
NOWDS	Number of Words		
EFN	Emitter File Number		
RALL	Return All Flag		
	0 - Return one		
	1 - Return all		

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

TECH OVERRIDE

Message #12

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-



# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2	EFN															
3	TECH															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message Number		
NOWDS	Number of Words		
EFN	Emitter File No.		
TECH	Technique #		

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

TECH RETURN

Message #13

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - RMDR  
Routine - -NA-

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MESGNO															
1	NOWDS															
2	EFN															
3	TALL															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	Number of Words		
EFN	Emitter File No.		
TALL	Technique All Flag		
	0 = Return One emitter		
	1 = Return All emitters		

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

MASTER CLEAR

Message #14

From: Processor - Resource  
Driver - DCDR  
Routine - DCANST

To: Processor - Resource  
Driver - ?  
Routine - ?

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO NOWDS	Message No. Number of words		

Word



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

SYSTEM TEST START

Message #15

From: Processor - Resource  
Driver - DCDR  
Routine - DCPOST

To: Processor - Resource  
Driver - ?  
Routine - ?

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

0

MSGNO

1

NOWDS

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of words		

Word

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of words		

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

START ABDDR MESSAGE

Message #17

From: Processor - Analysis  
Driver ABRDR, ABTCK

To: Processor - Analysis  
Driver ABDDR

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Ø

MSGNO

1

NOWDS

2

AMTPTR

3

4

5

6

7

8

9

10

11

12

13

14

15

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Message No. (= 17)	N/A	N/A
NOWDS	No. of data words (=1)	N/A	N/A
AMT PTR	Address of AMT entry to be processed	N/A	N/A

Word



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

SEND DATA

Message #18

From: Processor - Resource  
Driver - DCDR  
Routine - DCANU

To: Processor - Resource  
Driver - DCSEND  
Routine - -NA-

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO	Message No.		
NOWDS	No. of words		

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

SORTER CONTROL MESSAGE

Message #19

From: Processor - Classification  
Driver SODR, AB1DR  
Routine SODEL

To: Processor - Signal Sorter Supervisor  
Driver N/A

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Ø

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

15

14

13

12

11

10

9

8

7

6

5

4

3

2

1

0

MNO

NW

CODE

SFN

D1

D2

D3

D4

D5

D6

D7

D8

NOT USED

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive message no. ( = 19 )	N/A	1
NW	No. of words in message (variable, max. of 9)	N/A	1
CODE	SC-to-Sorter message op-code (Valid codes are X'01' thru X'1C' inclusive. See Sorter-SC ICD, document no. 53959-JK-1002)	N/A	N/A
SFN	Sorter file no. ( $0 \leq \text{SFN} \leq 127$ )	N/A	1
D1 ↓ D8	SC-to-Sorter message data (The format and no. of these data words are a function of the CODE used. Formats are defined in the Sorter-SC ICD.)		

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

MODIFY DISPLAY

Message #20

From: Processor - Resource  
Driver - RMDR  
Routine - -NA-

To: Processor - Resource  
Driver - DCDR  
Routine - -NA-

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	MSGNO															
1	NOWDS															
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																



# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	Scaling
MSGNO NOWDS	Message No. No. of words		

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

ET INTERRUPT MESSAGE

Message #21

From: RMP EXEC  
EMITTER TRACKER INTERRUPT

To: Processor - RMP  
Driver - RMDR

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

MNO

NW

TD

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. (=21)	N/A	1
NW	No. of Words in message (=1)	N/A	1
TD	Track Dropped (X' F204')	N/A	1
	(Bit n) =1      interrupt from channel no. n		

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

START ABIDR MESSAGE

Message #22

From: Processor - Analysis  
Driver - AB2DR

To: Processor - Analysis  
Driver - ABIDR

**RAYTHEON**RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Word Ø

MNO

1

NW

2

NOT USED

3

4

5

6

7

8

9

10

11

12

13

14

15

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. (= 22)	N/A	1
NW	No. of words (= 0) No Data	N/A	1

Word

**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

AP AUX BUS CONTROL MESSAGE

Message #23

From: Processor - Analysis  
Driver - ABIDR

To: Processor - Classification  
Driver - AB1DR



# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word Ø

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	MNO															
1	NWDS															
2	OPCD								SFN							
3	← Ø →				TTAMP				SC	← Ø →						
4	NOT USED															
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MNO	Executive Message No. (= 23)	N/A	1
NWDS	No. of words in message (= 2)	N/A	1
OPCD	SC-to-Sorter Message Op-Code X'Ø'E' = SPDW Request X'Ø'F' = SPDW Stop	N/A	N/A
SFN	Sorter File No. (0 ≤ SFN ≤ 127)	N/A	1
TTAMP	Aux Bus Amplitude Threshold	DBM	3.2
SC	SPDW's to AP Flag (= 1)	N/A	N/A

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

GET MAIN MESSAGE

Message #24

From: Processor - CP  
Driver - ECDR  
Routine - ECLV1

To: Processor - CP  
Driver - EXCP  
Routine - EXMSG

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word Ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
MSGNO															
1 NWDS															
2 NOT USED															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Executive Msg. No. (= 24)	N/A	1
NWDS	No. of data words (= 0)	N/A	1

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

FREE MAIN MESSAGE

Message #25

From: Processor - CP  
Driver - ANDR  
Routines - ANLV2, ANOC4, ANAMB

To: Processor - CP  
Driver - EXCP  
Routine - EXMSG

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Word 0	MSGNO															
1	NWDS															
2	CLPTR															
3	NOT USED															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Field	Description	Units	LSB
MSGNO	Executive Msg No. (= 25)	N/A	1
NWDS	No. of data words (= 1)	N/A	1
CLPTR	Address of block being returned to free-block queue	N/A	N/A

Word



Communication Buffer

The Communication Buffer is an area in each of the common memories between each of the processors (classification, resource, and analysis). This space is used for dynamic allocation of Message Control Blocks (MCB) created and released upon the demand of the Executive Inter Processor Communication sub function (EXIPC), resident in each processor. The message control blocks contain the messages being passed between processors.

The allocated space for this set of buffers is variable, dependent upon the common memory.

The allotment is as follows:

Classification/Analysis	Common	(TBD) Words
Analysis/Resource	Common	(TBD) Words
Resource/Classification	Common	(TBD) Words

Each of the above areas are segmented into 22 word blocks for allocation.

Resident with each of the buffers are lock out control word allocating control to one processor or another. In addition are the start and end points for the chaining of unallocated blocks.

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

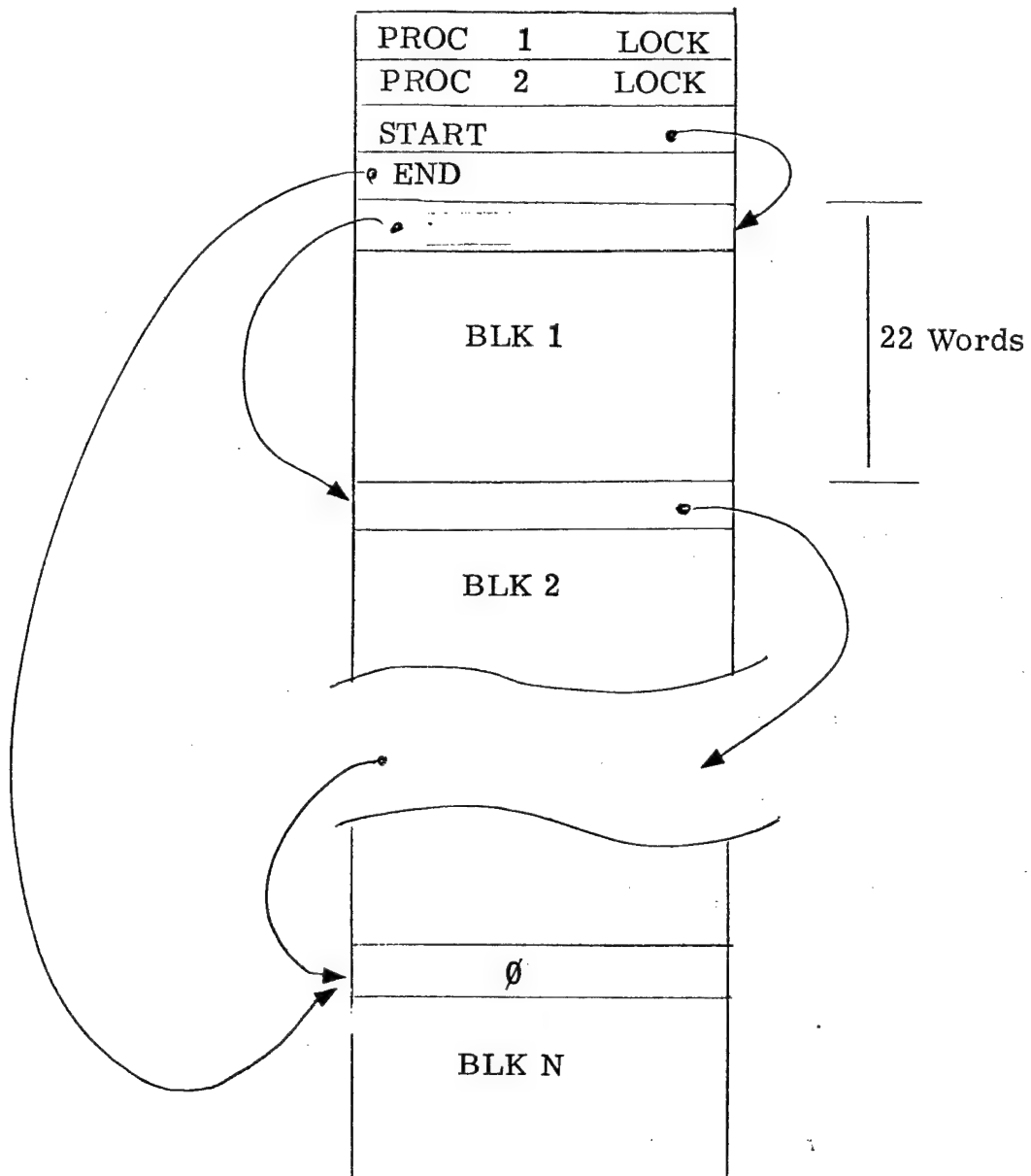
CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV



**RAYTHEON**

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

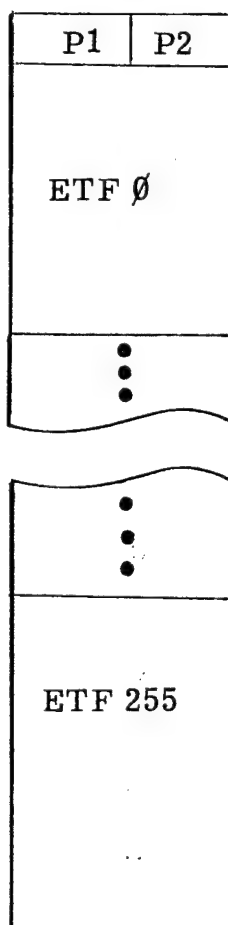
Emitter Track File (EF)

The Emitter Track File contains parameter data, file linkages, classification data, response data, display data, and control fields.

The file is arranged to hold up to 256 entries - 1 entry for each emitter or pulse train being tracked by IEWS.

## Emitter Track File Table

- . Length of Table 256 Files
- . Length of File 16 Words
- . Length of Word 16 Bits
- . Access Method
  1. Access Control Words
  2. Indexed Displacement



Processor Control Words

Emitter Track File 0

Emitter Track File 255

## Emitter Track File Table

## Indexed Symbolic Displacement Access Method

Symbol	Displacement	Function
. ETFPC1		P1 Control Word
. ETFPC2		P2 Control Word
. ETF	Base: ETF Index (0) (16)  Address (Effective)  ETF + (0) (16)	ETF File Structure
	• • •	$\emptyset \geq N \leq 255$  ETFN
	Base: ETF Index (N) (16)  Address (Effective)  ETF + (N) (16)	

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	ø								
EFTH		EFLP		EFAVPI																			
1		EFPRD						EFAZ															
2		EFRQD			EFPTYP			EFSTAG			EFPW												
3		EFQPRI			EFQPW			EFQF			EFQAZ												
4		EFREQ																					
5		EFOSET			EFRF			EFPAMP			EFA		EFCW										
6		EFMF		EFSM		EFPRC																	
7		EFSTYP			_____			EFSPRD															
8		EFSTEC			_____			EFPTEC															
9		EFTTEC			_____			EFLETH															
10		EFACT		EFSIND		EFUPD		EFREID		EFPWV		EFV		EFPV		_____		EFOPRI		EFTFN			
11		EFLNK						EFBLNK															
12		EFALNK						EFID															
13		EFMLNK						EFPLNK															
14		EFCLNK						EFELN															
15		EFEOCH		EFPRSC		EFTESO		EF-NAVY		EFDISP				_____		EFENG		EFVCUF					

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	EF Word 0
EFTH	EFLP	EFAVPI														

Field	Description	Units	Scaling
EFTH	Throttled Emitter 1 = TH 0 = $\overline{\text{TH}}$		
EFLP	Long Pulse 1 = LP 0 = $\overline{\text{LP}}$		
EFAVPI	Average PRI Bit $\phi = 1 \mu\text{sec}$		

EF Word  $\phi$

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFPRD								EFAZ							

EF  
Word  
1

Field	Description	Units	Scaling
EFPRD	PRI Dispersion      Bit $\phi$ = 8 $\mu$ sec		
EFAZ	Measured Azimuth of Emitter Bit $\phi$ = 5.625, Max Value = 360°	BAMS	

EF Word 1



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
EFRQD					EFP TYP					EFSTAG					EFPW	

EF  
Word  
2

Field	Description		Units	Scaling
EFRQD	Frequency Dispersion Bit 0 = 10 MHz			
EFP TYP	PR TYP 0000 - Pulse Group (EPG) 0001 - Steady (EPSDY) 0010 - Staggered (ESTAG) 0011 - Swept (ESWPT) 0100 - Jittered (EJITT)			
EFSTAG	PRI Stagger Indicator Bit 0 = Binary Point LSB = 1			
EFPW	Average Pulse Width Coded Mode 1 Mode 2 Bit 0 LSB = 4 $\mu$ sec			

EF Word 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFQPRI															
EFQPW															
EFQF															
EFQAZ															

EF  
Word  
3

Field	Description	Units	Scaling
EFQPRI	PRI Quality		
EFQPW	Pulse Width Quality		
EFQF	Frequency Quality		
EFQAZ	Azimuth Quality		

EF Word 3

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFREQ															

Field	Description	Units	Scaling
EFREQ	Average Frequency Bit 0 (LSB) = .3125 MHz Max Value = 20479 MHz		

EF Word 4

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFO SET															
								EFRF							
								EFPAMP							

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFMF	EFMS	EFPRC													

Field	Description	Units	Scaling
EFMF	Multiple Frequency Indication 1 = MF 0 = MF		
EFMS	Scan EFMS Measured 1 = SM 0 = SM		
EFPRC	Composite PRI LSB = 4 $\mu$ sec Max = 65532 $\mu$ sec		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFSTYP															
EFSPRD															

EF  
Word  
7

Field	Description															Units	Scaling
EFSTYP	Scan Type 0000 NUL 0001 Circular 0010 Sector 0011 Conical 0100 Steady 1101 Side Lobe Scan Period LSB = .25 msec																
EFSPRD	ECIR ESECT ECON ESTDY ESDLB IV = 3FF <sub>X</sub>																

EF Word 7

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFSTEC												EFPTEC			

EF  
Word  
8

Field	Description	Units	Scaling
EFSTEC	Secondary Technique Number		
EFPTEC	Primary Technique Number		

EF Word 8

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFTEC															
EFLETH															

EF  
Word  
9

Field	Description	Units	Scaling
EFTEC	Tertiary Technique Number		
EFLETH	Lethality		

EF Word 9



	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFACT	EF SIND	EF UPD	EF REID	EF PWV	EF FV	EF IV	EF OPRI			EFFN						

Field	Description	Units	Scaling
EFACT	File Active 0 Not Active 1 Active		
EFSDND	Scan State 0 State not Valid 1 State Valid (IV) (10)		
EFUPD	Update Scan 0 Not Updated 1 Updated		
EFREID	Reidentification Control 0 No Reidentification 1 Reidentification		
EFPPW	Pulse Width Valid 0 PW not Valid 1 PW Valid		
EFV	Frequency Valid 0 Frequency not Valid 1 Frequency Valid		
EFPIV	Pulse Interval Valid 0 PI not Valid 1 PI Valid		

EF Word 10

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFACT	EFSIND	EFUPD	EFREIDE	FPWV	EFFV	EFPIV		EFOPRI				EFTFN			

Field	Description	Units	Scaling
EFOPRI	Old PRI		
EFTFN	Throttle File Number		

EF Word 10

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFBLNK															
EFBLNK															
EFBLNK															

EF  
Word  
11

Field	Description	Units	Scaling
EFLNK	Forward Azimuth Link IV = EFN EFN		
EFBLNK	Backward Azimuth Link IV = EFN EFN		

EF Word 11

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFALNK															
EFID															

EF  
Word  
12

Field	Description										Units	Scaling
EFALNK EFID	Agile Link	IV = EFN										
	Identification Code											
	0000	No Identification	ENOID									
	0001	SA1	ESAI	10001					NOFA1	ENA1		
	0010	SA2	ESA2	10010					NOFA2	ENA2		
	0011	SA3	ESA3	10011					Unclassified	EUCLS		
	0100	SA4	ESA4									
	0101	SA5	ESA5									
	0110	SA6	ESA6									
	0111	SA7	ESA7									
	1000	SA8	ESA8									
	1001	SA9	ESA9									
	1010	SA	ESA0									
	1011	AAA	EAAA									
	1100	AI	EAI									
	1101	TEST	ETST									
	1110	UNKNOWN	EUNK									
	1111											
	10000	OTHER	EOTHR									

EF Word 12

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFMLNK								EFPLNK							

EF  
Word  
13

Field	Description	Units	Scaling
EFMLNK	Mode Link IV = EFN		
EFPLNK	Platform Link IV = EFN		

EF Word 13

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EFCLNK															
EFELN															

EF  
Word  
14

Field	Description	Units	Scaling
EFCLNK	Correlated Link IV $\neq$ EFN		
EFELN	Emitter Library Code		

EF Word 14

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
EF EOCF	EF PRSO	EF TESO	EF NAVY	EF EFDISP							EFENG	EFVCUF			

EF  
Word  
15

Field	Description	Units	Scaling
EFEOCF	End of File 0 = End 1 = End		
EFPRSO	Priority Source 0 = SC 1 = Operator		
EFTESO	Technique Source 0 = SC 1 = Operator		
EFNAVY	Naval Code 0 = Naval 1 = Naval		

EF Word 15

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	EF Word 15
EF EOCF	EF PRSO	EF TESO	EF NAVY	EFDISP							EFENG		EFVUCUF			

Field	Description															Units	Scaling
EFENG	Emitter Engaged 0 = Not Engaged 1 = Engaged																
EFVUCUF	VCO Utilization Factor Display Code 0000 SA1 0001 SA2 0010 SA3 0011 SA4 0100 SA5 0101 SA6 0110 SA7 0111 SA8 1000 SA9 1001 SA0 1010 AAA 1011 AI 1100 TEST 1101 UNKNOWN 1110 1111																
EFENG	Emitter Engaged 0 = Engaged 1 = Engaged																
EFVUCUF	VCO Utilization Factor																



Priority File (PF)

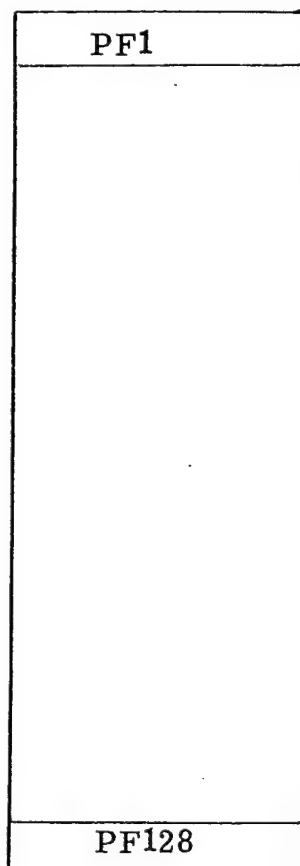
The Priority File is a list of threat EF entries whose lethality exceeds the lethality threshold.

The file contains 128 entries based upon their relative lethality.

## Priority File

- . Length of Table 128 Entries
- . Length of File 1 Word
- . Length of Word 16 Bits
- . Access Method Indexed Displacement

PF



Base PF

Effective Address = PF + N

 $0 \leq N \leq 128$

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

PFPRSO	PFAR														
					PFCHNO										

ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

PFPRSO	PFAR	DC													
					PFCHNO										

Word  
ø

Field	Description	Units	Scaling
PFPRSO	Priority Source 0 = SC 1 = Operator		
PFAR	Active Response 0 = Not Active 1 = Active		
PFCHNO	JSF Number		
PFETFA	ETF Number		

Priority File Word 1

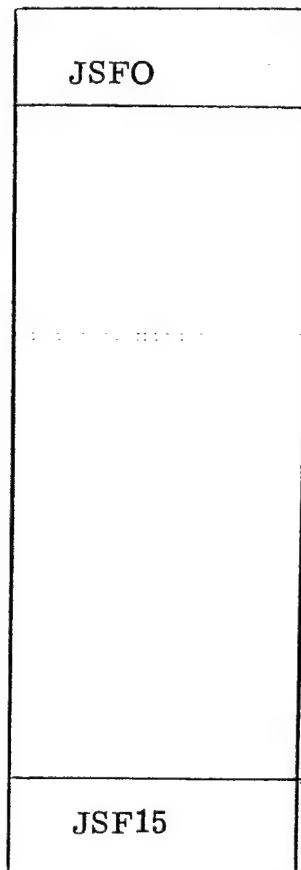
Jam Status File (JS)

The Jam Status File contains data on the response in progress with respect to the sixteen response channels.

## Jam Status File

- Length of Table 16 Entries
- Length of Entry 2 Words
- Length of Word 16 Bits

JS



Base JS

Effective Address = JS + (N)(2)

 $0 \leq N \leq 15$

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
JSGPNO	JSTKLK						JSGND		JSGNC		JSGNB		JSGNA		
JSEFN															

ø

1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
JSGPNO	JSTKLK						JSGND		JSGNC		JSGNB		JSGNA		

JS  
Word  
ø

Field	Description															Units	Scaling
JSGPNO	Option Number 00 Inactive 01 10 Active 11																
JSTKKNK	Tracker Links 00 No Chain 01 Source 10 Up 11 Down																
JSGND	Generator D 0 Not in Use ≠0 In Use																
JSGNC	Generator C 0 Not in Use ≠0 In Use																
JSGNB	Generator B 0 Not in Use ≠0 In Use																
JSGNA	Generator A 0 Not in Use ≠0 In Use																

JS Word ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
JSEFN															

Word

Field	Description	Units	Scaling
JSEFN	Jam Status Emitter File Emitter Track File Number		

JS Word 1

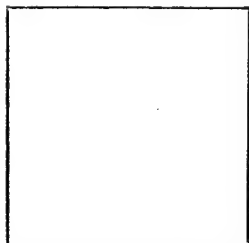
Resource File (RF)

The Resource File contains data on which resources are currently in use. These resources consists of special generators and VCO usage.

## Resource File

- . Length of File 1 Entry
- . Length of Entry 5 Words
- . Length of Word 16 Bits

RF



Base = RF

Effective Address = RF

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	Ø
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

Ø

															RFGNA
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

1

															RFGNB
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

2

															RFGNC
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

3

															RFGND
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-------

4

RF CW	RF MXMF	RFMF													RFTUF
----------	------------	------	--	--	--	--	--	--	--	--	--	--	--	--	-------

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGENA															

RF  
Word  
0

Field	Description	Units	Scaling
RFGENA	Generators Available (Complemented) LSB = 1 Generator Available		

RF Word 0



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
													RFGNB		

/RF  
Word  
/1

Field	Description	Units	Scaling
RFGNB	Generator Available (Complemented) LSB = 1 Generator Available		

RF Word 1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGNC															

RF  
Word  
2

Field	Description	Units	Scaling
RFGNC	Generators Available (Complemented) LSB = 1 Available		

RF Word 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
RFGND															
RFGND															

RF  
Word  
3

Field	Description	Units	Scaling
RFGND	Generators Available (Complemented) LSB = 1 Generator Available		

RF Word 3

## RF Word 4

Field	Description	Units	Scaling
RFCW	Continuous Wave 0 1		
RFXMF	Max MF  0 <sub>10</sub> = 1 freq 1 <sub>10</sub> = 2 freq 2 <sub>10</sub> = 3 freq 3 <sub>10</sub> = 4 freq		
RFXFD	MF Present		
RFTUF	Total Utilization Factor		

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

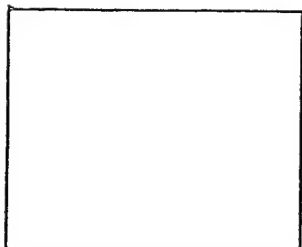
C/D Status File (CD)

The C/D status file contains data indicating the status of the IEWS system as it has been defined by the IEWS operator through the DC unit.

C/D Status File

- . Length of File 1 entry
- . Length of Entry 10 Words
- . Length of Word 16 Bits

DC



Base = DC

Effective Address = CD

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

0	CDPAGE														
1	CDLHDLT														
2	CDX	CDHKID													
3	CDY	CDHKTF													
4	CDTHTO														
5	CDEXAZ														
6	CDSYTT	CDAII	CDHOOK		GDEXP		CDRPO								
7	CDTE	CDPE	CDKB												
8	CDLIST	CD FWD	CD BACK	CD AQU	CDLPTR										
9	CD NEAP	CD NPTY	CD MG1	CD MG2	CD MG3										

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDPAGE															

CD  
Word  
0

Field	Description	Units	Scaling
CDPAGE	Page		

CD Word 0

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDLHDG															
CDLHDG															

CD  
Word  
1

Field	Description	Units	Scaling
CDLHDG			

CD Word 1



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DCX			CDHKID												

CD  
Word  
2

Field	Description	Units	Scaling
CDX	HKID Valid 0 Not Valid 1 Valid		
CDHKID	HCOK ID Emitter Track File Number		

CD Word 2

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DCY								CDHKTF							

CD  
Word  
3

Field	Description	Units	Scaling
CDY	HKTF Valld 0 Not Valid 1 Valid		
CDHKTF	HOOK Track File Emitter Track File		

CD Word 3

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CD Word 4															
CDTHTO															

Field	Description	Units	Scaling
CDTHTO	Threat Total		

CD Word 4

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDEXAZ															

CD  
Word  
5

Field	Description	Units	Scaling
CDEXAZ			

CD Word 5

Field	Description	Units	Scaling
CDSYSTT	System Test		
	0 Off		
	1 On		
CDALL	All Priority		
	0 Off		
	1 On		
CDHOOK	Hook		
	0 Off		
	1 On		
CDEXP	Expanded		
	0 Off		
	1 On		
CDURPO	Cursor Position		
	LSB = 5.625° R		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CDTE	CDPE	CDKB													

CD  
Word  
7

Field	Description	Units	Scaling
CDTE	Technique Enter 0 = Off 1 = On		
CDPE	Priority Enter 0 = Off 1 = On		
CDKB	Keyboard Enter 0 = Off 1 = On		

CD Word 7

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	CD Word 8
CDLIST	CDFWD	CD BACK	CDAQ													

Field	Description	Units	Scaling
CDLIST	List 0 No List 1 List		
CDFWD	Forward 0 Forward 1 Forward		
CDBACK	Back 0 Back 1 Back		
CDAQ	Acquire 0 Acquire 1 Acquire		
CDLPTR	Line Pointer Number 0 <sub>10</sub> = line 0 7 <sub>10</sub> = line 7		

CD Word 8

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CD NEAP	CD NPTY	CD MG1	CD MG2	CD MG3											

CD  
Word  
9

Field	Description															Units	Scaling
CDNEAP	New Expand 0 = No Expand 1 = Expand																
CDNPTY	New Priority 0 = Old Priority 1 = New																
CDMG1	Missile Guidance 1 0 = Off 1 = On																
CDMG2	Missile Guidance 2 0 = Off 1 = On																
CDMG3	Missile Guidance 3 0 = Off 1 = On																

CD Word 9



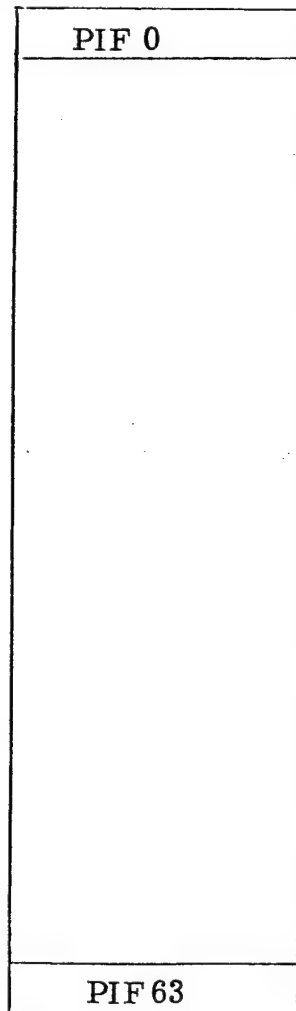
Polar Image File (PI)

The Polar Image File contains data on the current state of the polar display.

## Polar Image File

- . Length of File 64 Entries
- . Length of Entry 1 Word
- . Length of Word 16 Bits

PIF



Base = PIF

Effective Address = PIF + N (1)

 $0 \leq N \leq 63$



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	PI Word 0
P1V	PIF															

Field	Description	Units	Scaling
PV	Valid 0 = Valid 1 = Invalid		
PIF	Polar Image File Emitter Track File Number		

PI Word 0

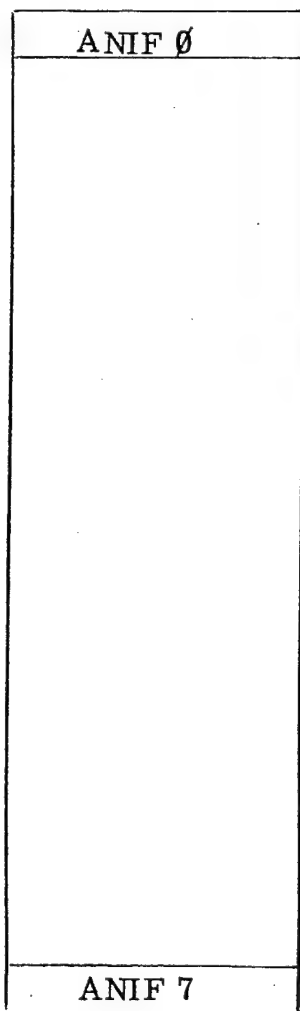
AN Image File (AN)

The AN Image File contains data on the current state of the AN display when operating in the list mach.

## AN Image File

- . Length of File 8 Entries
- . Length of Entry 1 Word
- . Length of Word 16 Bits

ANIF



Base = ANIF

Effective Address = ANIF + (N)

 $0 \leq N \leq 7$



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ANW	ANAIEF														

AN  
Word  
ø

Field	Description	Units	Scaling
ANW	Valid 0 = Valid 1 = Invalid		
ANAIEF	Alpha Numeric Emitter File Emitter Track File Number		

AN Word ø

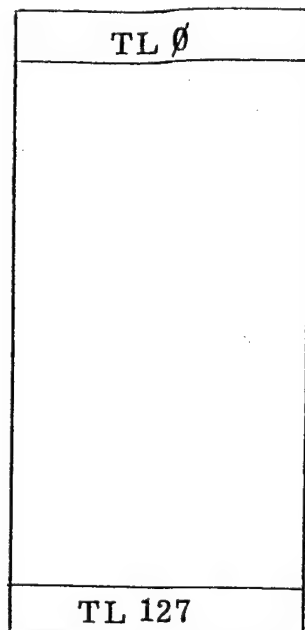
Technique Library (TL)

The Technique Library contains data on the techniques used in IEWS.

## Technique Library

- Length of Library 128 Entries
- Length of Entry 1 Word
- Length of Word 16 Bits

TL



Base = TL

Effective Address = TL + N

 $0 \leq N \leq 127$





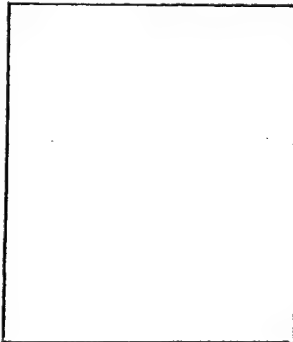
Resource Library (RL)

The Resource Library contains data on available external resources for IEWS responses.

## Resource Library

- . Length of Library 1 Entry
- . Length of Entry 1 Word
- . Length of Word 16 Bits

RL



Base = RL

Effective Address = RL



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DC	RLGND			RLGNC		RLGNB		RLGNA		RLCHN2			RLCHN1		

RL Word 0

Field	Description			Units	Scaling
RLGND	# of Generators Available	Type D			
RLGNC	" "	" C			
RLGNB	" "	" B			
RLGNA	" "	" A			
RLCH2	# of Alternative Channels Available				
RLCH1	" Primary	"			

RL Word 0

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

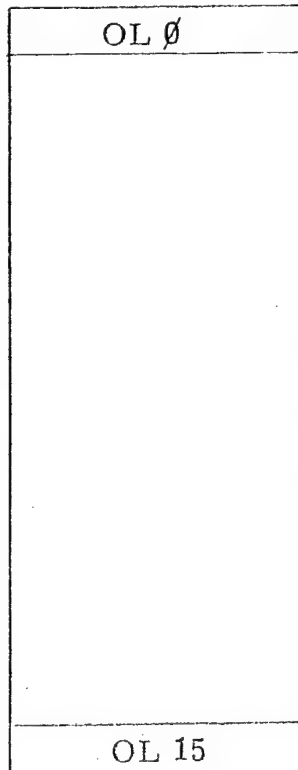
### Option Library (OL)

The Option Library contains data and pointers to be used for the selection of technique options.

#### Option Library

- . Length of Library 16 Entries
- . Length of Entry 2 Words
- . Length of Word 16 Bits

OL



Base = OL

Effective Address = OL + 2N

$0 \leq N \leq 15$

REV

10149 35M 1165 VELLUM PRINTED IN U.S.A.  
10149 35M 1165 FILM

OL	Word	$\beta$													
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
				OLTNO				OLDF2				OLDF1			

OL  
Word  
ø

Field	Description	Units	Scaling
OLTNO	Selected Option Pointer		
OLDF2	Frequency Limits		
OLDF1	Frequency Limits		

OL Word ø

OL  
Word  
1

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
						OLPI2									
												OLPI1			

Field	Description	Units	Scaling
OLPI2	PRI Limit		
OLPI1	PRI Limit		

OL Word 1

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

Emitter Library 2 Data (EL)

The Emitter data section of EL contains discriminate data, classification code, and response codes for each mode of each described emitter.

When the library entry describes a continuous wave entry EL2 words 3/4 describe maximum and minimum frequencies, whereas in a pulse entry words 3/4 describe scan.



# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	E2 Type				E2 FALINK											
1	E2 PLAT				E2 MODE				E2 ID CODE							
2	E2 ALR 50	E2 CW	_____		E2 FNCT				E2 WFACT							
3	E2 SCAN				_____		E2 MXSN (E2 MX FQ)									
4	_____				E2 MNSN (E2 MN FQ)											
5	E2 POLL				E2 DT1				E2 TC1							
6	E2 HIT				E2 DT2				E2 TC2							
7	_____				E2 DT3				E2 TC3							
8	E2 FD				E2 FC				E2 FB				E2 FA			
9	E2 DTB				E2 PTB				E2 DTA				E2 PTA			
10	E2 DTD				E2 PTD				E2 DTC				E2 PTA			

Emitter Library 2

156

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 TYPE				E2 FALINK											

E2  
Word  
Ø

Field	Description															Units	Scaling
E2 TYPE	<p>Generic Type</p> <p>0000 Undesignated MUNDS</p> <p>0001 AAA MAAA</p> <p>0010 SAM MSAM</p> <p>0011 A1 MA1</p> <p>0100 Test MTST</p> <p>0101 Other MOTH</p> <p>0110</p>																
E2 FALINK	Family Association																

E2 Word Ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 PLAT			E2 MODE			E2 ID									

E2  
Word  
1

Field	Description															Units	Scaling
E2 PLAT	Platform Type 001 - Land (MLAND) 010 - Air (MAIR) 100 - Sea (MSEA)																
E2 MODE	Operating Mode of Emitter																
E2 ID	Identification Code of Emitter 0000 No Identification 0001 SA1 0010 SA2 0011 SA3 0100 SA4 0101 SA5 0110 SA6 0111 SA7 1000 SA8 1001 SA9 1010 SA0 1011 AAA 1100 AI 1101 TEST 1110 UNK 1111 10000 OTHER ENOID ESA1 ESA2 ESA3 ESA4 ESA5 ESA6 ESA7 ESA8 ESA9 ESA0 EAAA EAI ETST EUNK EOTHR																

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 PLAT			E2 MODE			E2 ID									

E2  
Word  
1

Field	Description															Units	Scaling
E2 PLAT	Platform Type 001 - Land (MLAND) 010 - Air (MAIR) 100 - Sea (MSEA)																
E2 MODE	Operating Mode of Emitter																
E2 ID	Identification Code of Emitter 0000 No Identification ENOID 0001 SA1 ESA1 0010 SA2 ESA2 0011 SA3 ESA3 0100 SA4 ESA4 0101 SA5 ESA5 0110 SA6 ESA6 0111 SA7 ESA7 1000 SA8 ESA8 1001 SA9 ESA9 1010 SA0 ESA0 1011 AAA EAAA 1100 AI EAI 1101 TEST ETST 1110 UNK EUNK 1111 10000 OTHER EOTHR																

Field	Description	Units	Scaling
E2 ALR 50	ALR 50 Active 0 Active 1 Active		
E2 CW	Continuous Wave 0 CW 1 CW		
E2 FNCT	Function		
E2 WTFACT	Weighting Factor		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 SCAN						E2 MXSN									

E2  
Word  
3A

Field	Description		Units	Scaling
E2 SCAN	Type of Scan Modulation			
	0000	NUL		
	0001	Circular		
	0010	Sector		
	0011	Conical		
	0100	Steady		
	0101	Side Lobe		
E2 MXSN	Maximum Scan Period			
	LSB = .25 msec			

E2 Word 3A

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 Word 3B															
E2 MXFQ															

Field	Description	Units	Scaling
E2 MXFQ	Maximum Frequency		

E2 Word 3B

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
DC						E2 MNSN									

Field	Description	Units	Scaling
E2 MNSN	Minimum Scan LSB = .25 msec		



15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	E2 Word 4B
E2 MNFQ																

Field	Description	Units	Scaling
E2 MNFQ	Minimum Frequency		

E2 Word 4B

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

E2  
Word  
5

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 POLL					E2 DT1					E2 TC1					

Field	Description	Units	Scaling
E2 POLL	Poll Period Interval 0000 4 msec 0001 8 msec 0010 16 msec 0011 256 msec 0100 4 sec 0101 8 sec 0110 16 sec 0111 32 sec		
E2 DT1	Technique Data 1 PTR		
E2 TC1	Primary Basic Technique		

E2 Word 5

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2HIT (DC)				E2DT (N)				E2 TC (N)							

N = 2, 3

Field	Description	Units	Scaling
E2 HIT	Hit Count	Pulses	LSB = 16
E2 DT	Technique Data (N) PTR $2 \leq N \leq 3$		
E2 TC (N)	Technique Basic (N) N = (Secondary, Tertiary)		
DC	0000		

E2 Word 6/7

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 FD				E2 FC				E2 FB				E2 FA			

Field	Description	Units	Scaling
E2 FD	Amplitude Function for Lethality		
E2 FC	Angle Function for Lethality		
E2 FB	Altitude Function for Lethality		
E2 FA	Mode Function for Lethality		

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
E2 DT (N + 1, N + 3)				E2 PT (N + 1, N + 3)				E2 DT (N, N + 2)				E2 PT (N, N + 2)			

Field	Description	Units	Scaling
E2 PT N	Pointer to Subroutine		
E2 DT N	Data for indicated Subroutine		
	A = N		

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

Azimuth Link Table

The Azimuth Link Table contains the last Emitter Track number  
that is the last link in a chain.

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

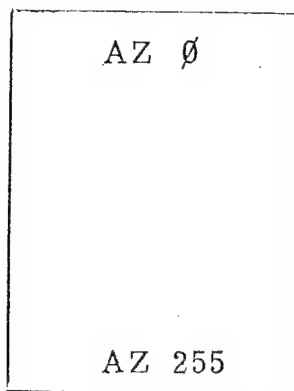
SHEET  
OF

REV

Azimuth Link Table (AZ)

- . Length of Table 256 Entries
- . Length of Entry 1 Word
- . Length of Word 16 Bits

AZ



Base = AZ

Effective Address = AZ + N

$0 \leq N \leq 255$





AZ  
Word  
ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
AZ ALT	AZAFLNK														
DC															

Field	Description	Units	Scaling
AZ ALT	Azimuth Active 0 = No entry 1 = Entry		
AFLNK	Azimuth Link Chain Entry (Last Link) Emitter File Number		

/AZ Word ø

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

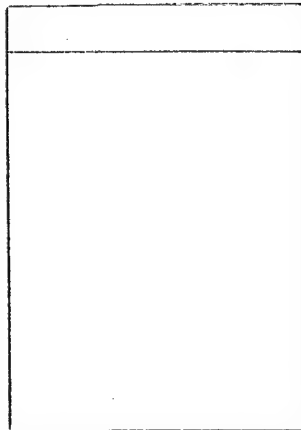
REV

Candidate List (CL)

The Candidate List contains all the passable Emitter ID codes that a entry in the Emitter Track file may match.

Candidate List

- . Length of Table N Entries
- . Length of Entries 1 Word
- . Length of Word 16 Bits
- . Number of Tables Variable



Word 1

Word N

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

CANDIDATE LIST

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---

CLNCD	CLEFN
-------	-------

CLID <sub>1</sub>	CLGPN <sub>1</sub>
-------------------	--------------------

CLID <sub>2</sub>	CLGPN <sub>2</sub>
-------------------	--------------------

CLID <sub>CLNCD</sub>	CLGRN <sub>CLNCD</sub>
-----------------------	------------------------

--

--

--

--

--

CL  
Word  
ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CLNCD								CLEFN							

Field	Description	Units	Scaling
CLEFN	Emitter Track File #: ø ≤ EFN ≤ 127		
CLNCD	Number of Candidates to follow ø ≤ NCAND ≤ 32		

CL Word ø

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
CLID <sub>i</sub>								CLGRN <sub>i</sub>							

C  
Word  
1-NCAND

Field	Description	Units	Scaling
CLGRN <sub>i</sub>	Group # of <sub>i</sub> th candidate $1 \leq i \leq \text{NCAND}$ . This is index into EL2, i.e., EL2 block pertaining to this candidate is at $\text{EL2} + (\text{GRPNO}_i - 1) \times 11$ Also: $1 \leq \text{GRPNO}_i \leq \# \text{ groups in EL2 and GRPNO} < \text{GRPNO}_2 < \dots < \text{GRPNO}_{\text{ncand}}$		
CLID <sub>i</sub>	Ident Field ( ) from GRPNO <sub>i</sub> th block of EL2		

CL Word 1 = CLNCD

Analysis Management Table (AM)

The AM Table contains data indicating the status of analyses in progress in the Analysis Processor.

## Analysis Management Table

- . Length of Table                      8 Primary entries  
                                            8 Secondary entries  
                                            8 Tertiary entries
- . Length of Primary entry    16 words
- . Length of Secondary entry   4 words
- . Length of Tertiary entry    4 words
- . Length of word                      16 bits
- . Access method

Primary entries are referenced by indexed displacement. Secondary and tertiary entries are linked to primary entries via pointers.

# RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

BASE: AM

PRIMARY  
ENTRIES

Effective Address:  
AM + (0) (16)

AM  
P0

BASE: AMTSE

SECONDARY  
ENTRIES

AM + (7) (16)

AM  
P7

AMTSE + (0) (4)

AM  
50

BASE: AMTTE

TERTIARY  
ENTRIES

AMTSE + (7) (4)

AM  
S7  
AM  
T0

AMTTE + (0) (4)

AMTTE + (7) (4)

AM  
T7

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## AMT PRIMARY ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	YFLG				Not Used											
1	YPTY															
2	YRMC								FEFN							
3	YPTR															
4	YAMC															
5	YC1	Not Used						YCF1								
6	YC2	Not Used						YCF2								
7	YC3	Not Used						YCF3								
8	YNDB															
9	YSEP															
10	YTIM															
11	YNBP															
12	YDQS															
13	YDQE															
14	YTEP															
15	Not Used	YAMP						Not Used								



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## AMT PRIMARY ENTRY

Field	Description	Units	LSB
YFLG	Flag Field		
	Bit 15 = Valid flag Valid AMT entry (if = 1)	N/A	N/A
	Bit 14 = Done Flag (all data accumulation accomplished if = 1)	N/A	N/A
	Bit 13 = Start Flag (analysis is to be started on next tick if = 1)	N/A	N/A
	Bit 12 = Abnormal completion flag (= 1 means analysis did not terminate normally but there is sufficient data to attempt calculations)		
YPTY	Priority assigned to analysis (= 0, 1, 2, or 3)	N/A	1
YRMC	Return module code	N/A	1
	1 NE Proc 2                      6 EOC Proc 3		
	2 NE Proc 3                      7 EOC Proc 4		
	3 Nofa 2 Proc 2                  8 EC 2		
	4 Nofa 2 Proc 3                  9 EC 3		
	5 EOC Proc 2		
YEFN	Primary EFN under analysis $0 \leq \text{YEFN} \leq 127$	N/A	1
YPTR	Pointer to Data B      Candidate List	N/A	N/A
YAMC	Analysis Module Code	N/A	N/A
	0 Scan                      3 Contemporaneous		
	1 Frequency                4 Deinterleaving		
	2 PRI		
YC1	CEFN1 Flag (YCF1 is valid if YC1 = 1)	N/A	N/A
YCF1	Suspected contemporaneous EFN No. 1 $0 \leq \text{CEFN1} \leq 127$	N/A	1
YC2	CEFN2 Flag	N/A	N/A
YCF2	Suspected Contemporaneous EFN No. 2	N/A	1

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## AMT PRIMARY ENTRY

Field	Description	Units	LSB
YC3	CEFN3 Flag	N/A	N/A
YCF3	Suspected Contemporaneous EFN No. 3	N/A	1
YNDB	No. of double buffers (in ABI 1K RAM) required (= 1, 2, 3, or 4)	N/A	1
YSEP	Pointer to secondary AMT entry (AAT pointers)	N/A	N/A
YTIM	Time Analysis Started (Wraparound at X'FFFF')	msec	50
YNBP	Count of No. of buffers remaining to be processed	N/A	1
YDQS	SOQ Pointer for data queue	N/A	N/A
YDQE	EOQ Pointer for data queue	N/A	N/A
YTEP	Pointer to tertiary AMT entry (Tertiary entry is contemp. analysis counters)	N/A	N/A
YAMP	Aux Bus Amplitude Threshold	DBM	3.2

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

AMT SECONDARY ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	YPT1															
1	YPT2															
2	YPT3															
3	YPT4															
4	Not Applicable															
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

# AMT SECONDARY ENTRY

Field	Description	Units	LSB
YPT1	Pointer to AAT entry No. 1 assigned to this analysis	N/A	N/A
YPT2	Pointer to AAT entry No. 2	N/A	N/A
YPT3	Pointer to AAT entry No. 3	N/A	N/A
YPT4	Pointer to AAT entry No. 4	N/A	N/A

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

AMT TERTIARY ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	YCT1															
1	YCT2															
2	YCT3															
3	YCT4															
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## AMT TERTIARY ENTRY

Field	Description	Units	LSB
YCT1	Pulse counter assigned to YEFN	N/A	1
YCT2	Pulse counter assigned to 1st suspected CEFN	N/A	1
YCT3	Pulse counter assigned to 2nd suspected CEFN	N/A	1
YCT4	Pulse counter assigned to 3rd suspected CEFN	N/A	1

Analysis Buffer Assignment Table (AA)

The AA Table contains data indicating the assignment and status of the 64-word buffers in the ABI 1K RAM. The entries in the AA Table consist of pairs, each pair being a unit which can be assigned to an analysis. The first entry in the pair is the primary entry; the second is the secondary entry.

## Analysis Buffer Assignment Table

- . Length of Table 8 paired entries
- . Length of Paired Entries 2 entries
- . Length of Entry 4 words
- . Length of Word 16 bit
- . Access method

Indexed displacement on a  
paired or individual entry basis.

Base: AA

Effective Address	}	Pair <sub>0</sub>
AA + (0) (4)		
AA + (1) (4)		

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

AAT ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	BFLG				Not Used				BEFN							
1	BPTR															
2	BCTL															
3	BBUF															
4	Not Applicable															
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## AAT ENTRY

Field	Description	Units	LSB
BFLG	Flag field  Bit 15 = Valid flag (Valid Primary AAT entry if = 1)  Bit 14 = Primary flag (Primary AAT entry if = 1)  Bit 13 = Loading flag (Assigned buffer is being loaded if = 1)  Bit 12 = Full flag (Assigned buffer is full if = 1)	N/A	N/A
BEFN	EFN to which this entry is dedicated $0 \leq \text{BEFN} \leq 127$	N/A	1
BPTR	Pointer to AMT entry to which this entry is assigned	N/A	N/A
BCTL	Address of Buffer control word for the 64-word buffer in the ABI 1K RAM corresponding to this entry	N/A	N/A
BBUF	Address of the 64-word buffer in the ABI 1K RAM	N/A	N/A

### Aux Bus Management Table (AU)

The AU Table contains data reflecting the history of SPDW requests and stops for Aux Bus data for each emitter track (EFN).

### Aux Bus Management Table

. Length of Table	128 entries
. Length of Entry	2 words
. Length of Word	16 bits
. Access method	Indexed displacement

Base: AU

Effective Address $AU + (0) \quad (2)$
$AU + (127) \quad (2)$

 $AU_{\emptyset}$ AU<sub>127</sub>

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

AUXMT ENTRY

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Ø	Not Used				XTMP			XSC		XTG		XCHN				
1	Not Used							XAMP					Not Used			
2	Not Applicable															
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

## AUXMT ENTRY

Field	Description	Units	LSB
XTMP	Aux Bus Amplitude threshold sent to sorter (TTAMP)	DBM	3.2
XSC	AP SPDW flag (if = 1 SPDW's are being routed to AP)	N/A	N/A
XTG	RMP SPDW flag (if = 1 SPDW's are going routed to RMP)	N/A	N/A
XCHN	Techniques Generator Channel No.	N/A	1
XAMP	Copy of EFPAMP from ETF	DBM	1.6

Note: SC, AGTG, and CHNL are referenced as XTCD (TCODE)

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Alpha Numeric Memory (AC)

Each location gives one right justified ASC11 character Position

N on line M given at location  $AL + 24 M + N$ 

Length of Table	24 x 9 words
Length of Word	16 bits
Access Method	Indexed displacement

0		Char	1	Line	1
1			2		1
2			3		1
3			4		1
24			24		1
0			1		2
			2		2
			3		2
24			24		9

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## APPENDIX B

### Table of Contents

Variable	Page
SYTHC	
SYHDC	
SYALC	
SYPTC	
SYROC	
SYFAC	

SYTHC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHC															

Field	Description	Units	Scaling
SYTHC	Encoding threshold current value LSB = Bit $\phi$ = 1		

SYTHC Word

SYHDC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYHDC															

Field	Description	Units	Sealing
SYHDC	Current value of aircraft heading LSB = Bit $\phi$ = 1.4 $\phi$ 625	inc clock wise wrap around @ 3778	

SYHDC Word



SYALC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYALC															

Field	Description	Units	Sealing
SYALC	Current value of aircraft altitude LSB = Bit $\phi = 100$	Feet	

SYALC Word

SYPTC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYPTC															

Field	Description	Units	Scaling
SYPTC	Current value of aircraft pitch LSB = Bit 0 = (TBD)	TBD	

SYPTC Word

SYROC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYROC															

Field	Description	Units	Sealing
SYROC	Current value of aircraft roll LSB = Bit 0 = (TBD)	TBD	

SYROC Word

SYFAC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYFAC															

Field	Description	Units	Scaling
SYFAC	Current value of Azimuth correction factor LSB = Bit $\emptyset$ = 1.40625	° increasing clock wise wraparound @ 377 <sub>8</sub>	

SYFAC Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

## APPENDIX C

### Table of Contents

Constant	Page
ATC	
SYTHU	
SYTHC	
SYTHV	
SYBAC	

ATC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
ATC															

Field	Description	Units	Scaling
ATC	Amplitude threshold const LSB = Bit $\phi$ = 3.2	dBm	

ATC Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHU															

Field	Description	Units	Sealing
SYTHU	Encoding threshold upper limit LSB = Bit 0 = 1		

SYTHL  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHL															

Field	Description	Units	Scaling
SYTHL	Encoding threshold lower limit LSB = Bit 0 = 1		

SYTHL Word



SYTHV  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYTHV															

Field	Description	Units	Scaling
SYTHV	Encoding threshold incremental/decremental value LSB = Bit 0 = 1		

SYTHV Word

SYBAC  
Word

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
SYBAC															

Field	Description	Units	Sealing
SYBAC	Antenna boresight bearing constant LSB = Bit $\phi = 1.40625$	° increasing clock wise, wrap around 3778	

Word

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

APPENDIX D

HEX - ASCII CONVERSION

## HEX-ASCII

00	NUL	00	@	40	SP	20	00
01	SOH	01	A	41	"	21	01
02	STX	02	B	42	#	22	02
03	ETX	03	C	43	\$	23	03
04	EOT	04	D	44	%	24	04
05	ENQ	05	E	45	&	25	05
06	ACK	06	F	46	'	26	06
07	BEL	07	G	47	(	27	07
08	BS	08	H	48	)	28	08
09	HT	09	I	49	*	29	09
0A	LF	0A	J	4A	+	2A	0A
0B	VT	0B	K	4B	,	2B	0B
0C	FF	0C	L	4C	-	2C	0C
0D	CR	0D	M	4D	.	2D	0D
0E	SO	0E	N	4E	/	2E	0E
0F	SI	0F	O	4F	0	2F	0F
10	DLE	10	P	50	1	30	10
11	DC1 (X-ON)	11	Q	51	2	31	11
12	DC2 (TAPE)	12	R	52	3	32	12
13	DC# (X-OFF)	13	S	53	4	33	13
14	DC4	14	T	54	5	34	14
15	NAK	15	U	55	6	35	15
16	SYN	16	V	56	7	36	16
17	ETB	17	W	57	8	37	17
18	CAN	18	X	58	9	38	18
19	EM	19	Y	59	:	39	19
1A	SUB	1A	Z	5A	;	3A	1A
1B	ESC	1B	[	5B	<	3B	1B
1C	FS	1C	\	5C	=	3C	1C
1D	GS	1D	]	5D	>	3D	1D
1E	RS	1E	^	5E	?	3E	1E
1F	US	1F	_	5F		3F	1F

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

APPENDIX E

SYMBOLIC DESIGNATIONS

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

## APPENDIX E

### Table of Contents

Title	Page
Explanation	
Prefix Codes	
Emitter Track File	
Priority File	
Jam Status File	
Resource File	
CD File	
Polar Image File	
AN Image File	
Technique Library	
Resource Library	
Option Library	
Emitter Library 2	
Azimuth Link Table	
Candidate List	
Analysis Management Table	
Analysis Buffer Assignment Table	
Auxiliary Bus Management Table	

To facilitate the programming effort a dual set of symbolic designations have been established. The first is the representation used by this CDBDD. The second the symbolic memonics used by the software.

The definition of the software memonics are as follows:

-----	Prefix
-----	Memonic name
-----	Extension
XNAMD	Displacement of word in Table
S	Shift right to LSB
L	Length of field
B	MSB position
M	Mask word for field

The second column list the software symbology as defined above with the exception of the extensions.

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

Table Prefix

Symbolic Prefix

Emitter Track File	EF	E
Priority File	PF	P
Jam Status File	JS	J
Resource File	RF	R
DC Status File	CD	D
Polar Image File	PI	I
AN Image File	AN	A
Technique Library	TL	T
Resource Library	RL	L
Option Library	OL	O
Emitter Library 2	E2	M
Azimuth Link Table	AZ	Z
Candidate List	CL	C
Analysis Management Table	AM	Y
Analysis Buffer Assignment Table	AA	B
Aux Bus Management Table	AU	X

Table 3.6-1. Mnemonic/Table Cross Reference.



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO. SPEC NO.

49956

SHEET  
OF

REV

## EMITTER TRACK FILE

EF

(1 of 2 pages)

EFA	EFA
EFAC	EFAC
EFA LNK	EALK
EFAVPI	EAPI
AFAZ	EAZ
EFBLNK	EBLK
EFCLNK	ECLK
EFCW	ECW
EFDISP	EDIS
EFELN	ELN
EFEOCF	EOLF
EFENG	ENG
EFID	EID
EFLNK	EFLK
EFLETH	ELET
EFLP	ELP
EFMF	EMF
EFMLNK	EMLK
EFNAVY	ENAV
EFOSET	ESET
EFOPRI	EOPI
EFPAMP	EPMP
EFPTY	EPTY
EFPIV	EPIV
EFPLNK	EPLK
EFPRC	EPRC
EFPRD	EPRD
EFPRSO	EPRSO
EFPTC	EPTC

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## EMITTER TRACK FILE

EF (continued)

(2 of 2 pages)

EFPW	EPW
EPWV	EPWV
EFQAZ	EQAZ
EFQF	EQF
EFQPRI	EQPR
EFQPW	EQPW
EFREID	ERID
EFRF	ERF
EFFREQ	EFRQ
EFFRQD	EFQD
EFIND	ESIN
EFM	ESM
EFSPRD	ESPD
EFSTAG	ESTG
EFSTEC	ESTC
EFSTYP	ESTY
EFTESO	ETSO
EFTFN	ETFN
EFTH	ETH
EFTTEC	ETTC
EFUPD	EUPD
EFV	EFV
EFVCUF	EVCU

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

PRIORITY FILE

PF

PFAR

PAR

PFLHNO

PCHN

PFEFTA

PEFT

PFPRSO

PRSO

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

JAM STATUS FILE

JS

JSGNA

JGNA

JSGNB

JGNB

JSGNC

JGNC

JSGND

JGND

JSJSEFN

JSEF

JSOPNO

JOPN

JSTKLK

JTLK

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

RESOURCE FILE

RF

RFCW

RFGNA

RFGNB

RFGNC

RFGND

RFMXMF

RFMFP

RFTUF

RCW

RGNA

RGNB

RGNC

RGND

RMXF

RMFP

RTUF

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

CD STATUS FILE

CD

CDALL	DALL
CDALQ	DALQ
CDBACK	DBCK
CDRPOS	CDPS
CDEXAZ	DEAZ
CDEXP	DEXP
CDFWD	DFWD
CDHKID	DHID
CDHKTF	DHTF
CDHOOK	DHOK
CDKB	DKB
CDLHDG	DHDG
CDLIST	DLST
CDLPTR	DPTR
CDMG1	DMG1
CDMG2	DMG2
CDMG3	DMG3
CDNEAP	DNEP
CDNPTY	DNTY
CDPAGE	DPG
CDPE	DPE
CDTE	DTE
CDTHTO	DTTO
CDSYTT	DSTO
CDX	DX
CDY	DY

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

POLAR IMAGE FILE

PI

PIF

IPIF

PIV

IPIV

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

AN IMAGE FILE

AN

ANAIEF

AIEF

ANW

AW



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

TECHNIQUE LIBRARY

TL

TLPT

TPT

TLSPGN

TGEN

TLTT

TTT

TLVCO

TVCO

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

RESOURCE LIBRARY

RL

RLCH1

LCH1

RLCH2

LCH2

RLGNA

LGNA

RLGNB

LGNB

RLGNC

LGNC

RLGND

LGND

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

OPTION LIBRARY

OL

OLDF1

OFQ1

OLDF2

OFQ2

OLPI1

OPR1

OLPI2

OPR2

OLTNO

OTNO

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

## EMITTER LIBRARY 2

E2

(1 of 2 pages)

E2ALR	MALR
E2CW	MCW
E2DAT1	MDT1
E2DAT2	MDT2
E2DAT3	MDT3
E2FA	MFA
E2FALK	MFLK
E2FB	MFB
E2FC	MFC
E2FD	MFD
E2FNCT	MFNC
E2HIT	MHIT
E2ID	MID
E2MXFQ	MXFQ
E2MXSN	MXSN
E2MNFQ	MNFQ
E2MNSN	MNSN
E2MODE	MODE
E2PLAT	MPLT
E2POLL	MPOL
E2SCAN	MSCN
E2TC1	MTC1
E2TC2	MTC2
E2TC3	MTC3
E2TYPE	MTYP
E2WTFT	MFCT
E2DTA	MPTA
E2DTB	MPTB
E2DTC	MPTC

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

49956

SPEC NO.

SHEET  
OF

REV

EMITTER LIBRARY 2

E2 (continued)

(2 of 2 pages)

E2DTD

MDTD

E2PTA

MPTA

E2PTB

MPTB

E2PTC

MPTC

E2PTD

MPTD

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

AZIMUTH LINK TABLE

AZ

AZLNK

ZLNK

AZALT

ZALT

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

CANDLIST

CL

CLEFN

CEFN

CLGPN

CGPN

CLID

CID

CLNCD

CNCD

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

# ANALYSIS MANAGEMENT TABLE

AM

YAMC  
YAMP  
YC1  
YC2  
YC3  
YCF1  
YCF2  
YCF3  
YCT1  
YCT2  
YCT3  
YCT4  
YDQE  
YDQS  
YEFN  
YFLG  
YNBP  
YNDB  
YPT1  
YPT2  
YPT3  
YPT4  
YPTR  
YPTY  
YRMC  
YSEP  
YTEP  
YTIM



RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

ANALYSIS BUFFER ASSIGNMENT TABLE

AA

BBUF

BCTL

BEFN

BFLG

BPTR

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

# AUXILIARY BUS MANAGEMENT TABLE

AU

XAMP

XCHM

XSC

XTG

XTMP

RAYTHEON

RAYTHEON COMPANY  
LEXINGTON, MASS. 02173

CODE IDENT NO.

SPEC NO.

49956

SHEET  
OF

REV

## APPENDIX F

### CROSS REFERENCE TABLE

To Be Supplied